

**Claims**

1. A management system for execution of tasks involving context-independent processing of structured data, the system comprising:

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- means for receiving a request from an external client,
- a context-independent engine,

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- at least one adapter module for communicating between said external client and said context-independent engine, and adapting the context-independent engine to a specific application context,

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- at least one generator module connected to at least one back-end system residing on a computer network and is adapted to expose said at least one back-end system data as structured data ready for further processing,

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- at least one sink module connected to said at least one transformer for receiving said processed structured data adapted to interpreting and reacting according to the processed structured data and/or delivering the processed structured data back to said requested external client through said adapter module,

wherein the communication between the external client and the context-independent engine comprises means for selecting at least one generator module and at least one sink module for carrying out said processing of the structured data according to predefined set of instructions defined in an electronic document written in a special purpose programming language, designed for the management of processing any structured data.

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2. The management system according to claim 1, wherein one or several transformer modules are connected to said at least one generator adapted to receive and transform said structured data from said at least one generator to a processed structured data.

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3. The management system according to claim 1, wherein said context-independent engine reads and interprets said electronic document, written in said special purpose programming language, and controls thereby the execution within the management system.

4. The management system according to any of the preceding claims, wherein the processing of the said structured data is performed in the Extensible Mark-up Language (XML) format.

5. The management system according to any of the preceding claims, wherein said adapter module is capable of receiving and responding to requests received through Hyper Text Transfer Protocol (HTTP).

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6. The management system according to any of the preceding claims, wherein the said adapter module is capable of receiving and responding to requests received through Short Message Service (SMS).

10 7. The management system according to any of the preceding claims, wherein the adapter module is capable of receiving and responding to requests received through Multimedia Message Service (MMS).

15 8. The management system according to any of the preceding claims, wherein the adapter module is capable of receiving and responding to requests received through Simple Object Access Protocol (SOAP).

20 9. The management system according to any of the preceding claims, wherein said transformer module is capable of transforming XML data using Extensible Stylesheet Language Transformations (XSLT).

10. The management system according to any of the preceding claims, wherein said at least one generator module is adapted to communicate with at least one of the following back-end systems and convert their native data format to XML format:

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- any ODBC or JDBC compliant databases,
  - file system on the computer in which the said management system is executing,
  - any data source capable of communicating using the Hyper Text Transfer Protocol (HTTP),
  - any data source capable of communicating using the Simple Object Access Protocol (SOAP),
  - 30 - Microsoft Exchange TM Personal Information Management (PIM) system,
  - lotus Domino TM Personal Information Management (PIM) system,
  - any directory service through the Light-weight Directory Access Protocol (LDAP),
  - any email system through Simple Mail Transfer Protocol (SMTP), Post Office Protocol (POP / POP3) or Internet Message Access Protocol (IMAP).
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11. The management system according to any of the preceding claims, wherein the system is a presentation system comprising:

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- at least one adapter modules for receiving requests for content residing in back-end system from at least one network client,
  - a transformer module for transforming, in at least one step, XML source content into mark-up suitable for said at least one client, including:
    - 5       - transforming the XML source content to client independent mark-up,
    - adapting said client-independent mark-up to a version suitable for the particular type of client which requested said content,
  - sink module for delivering said mark-up to said clients.
- 10   12. The management system according to any of the preceding claims, wherein the format of the request from said at least one client is at least one of the following formats:
- portable document format (PDF),
  - client-specific Hypertext Mark-up Language (HTML),
  - 15   - client-specific Wireless Mark-up Language (WML),
  - short Message Service (SMS),
  - Multimedia Message Service (MMS), and
  - compact HTML (cHTML).
  - XHTML
- 20   13. The management system according to any of the preceding claims, wherein the system is a messaging system comprising:
- at least one adapter module adapted to communicate with external systems through
  - 25       a standardized electronic business protocol,
  - at least one generator module adapted to extract business data from source and destination system and expose it as XML,
  - at least one transformer module adapted to transform the relevant XML business source data into business messages,
  - 30       - at least one sink module adapted to delivering the business messages.
14. The management system according to any of the preceding claims, wherein the standardized business protocol is electronic business XML (ebXML).
- 35   15. The management system according to any of the preceding claims, wherein said system is an integration system comprising:
- means for initiating execution of XML processing tasks without invocation from an external client,

- means for synchronization of data between disparate source and destination systems wherein:
  - o at least one generator modules extracts data from the said source system and convert it to XML source data,
  - o at least one transformer modules transforms the XML source data into an XML format compatible with delivery into the said destination system,
  - o at least one sink modules with means for delivering the processed XML into the destination system,
- means for business process management and execution where each discrete task of a business process is defined and executed as a single XML processing task, and
- means for publishing a hypertext file set on the World Wide Web with information about the status of a business process in execution.

16. The management system according to any of the preceding claims, wherein the request from the external client contains information or data, which are used by the adapter module to determine which electronic document to execute.

17. In a network with a plurality of network devices, a method for managing and executing structured-data processing tasks, comprising the following steps:

- receiving a request, from an external client, for execution of a predefined context-dependant, structured-data processing task as it is defined by an instruction set wherein each of the said structured-data processing tasks is encoded in an instruction set using a special purpose, high-level programming language designed for management of processing of any structured data,
- interpreting and validating the instruction set and set up context-dependant execution environment based on the said instruction set and information found in the request from said external client,
- executing the context-dependant structured-data processing task, wherein the execution is comprised of the following steps:
  - connecting to back-end systems on the network and convert native back-end system data to structured source data, and optionally,
  - transforming the source structured-data into processed structured-data,
  - react to and/or somehow deliver the processed structured-data back to the requesting client.

18. The method according to claim 17, wherein the processing of the said structured data is performed in the Extensible Mark-up Language (XML) format.

5 19. The method according to claims 17 or 18, wherein said request is received through Hyper Text Transfer Protocol (HTTP).

20. The method according to any of the claims 17-19, wherein said request is received through Short Message Service (SMS).

10 21. The method according to any of the claims 17-20, wherein said request is received through Multimedia Message Service (MMS).

22. The method according to any of the claims 17-21, wherein said request is received through Simple Object Access Protocol (SOAP).

15 23. The method according to any of the claims 17-22, wherein the XML data is transformed using Extensible Stylesheet Language Transformations (XSLT).

20 24. The method according to any of the claims 17-23, wherein transforming the source structured-data into processed structured-data comprises transformation to XML format from formats supported by at least one of the following back-end systems:

- ODBC and/or JDBC compliant databases,
- file system on the computer in which the said management system is executing,
- any data source capable of communication through the Hyper Text Transfer Protocol (HTTP),
- 25 - any data source capable of communication through the Simple Object Access Protocol (SOAP),
- Microsoft Exchange TM Personal information management (PIM) system,
- Lotus Domino TM Personal information management (PIM) system,
- 30 - any directory service through the Light-weight Directory Access Protocol (LDAP),
- any email system through Simple Mail Transfer Protocol (SMTP), Post Office Protocol (POP / POP3) or Internet Message Access Protocol (IMAP).

25. A computer readable medium having stored therein instructions for causing a central  
35 processing unit to execute the method of any of Claims 17 - 24.

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